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TKACHENKO, V.V.; POCHTOVENKO, Yu.Ye., kand. tekhn. nauk; TERLETSKIY, I.V., kand. tekhn. nauk

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2. Khar'kovskiy institut gornogo mashinostroyeniya, avtomatiki i vychi[redacted]l'noy tekhniki (for Pochtovenko, Terletskiy).

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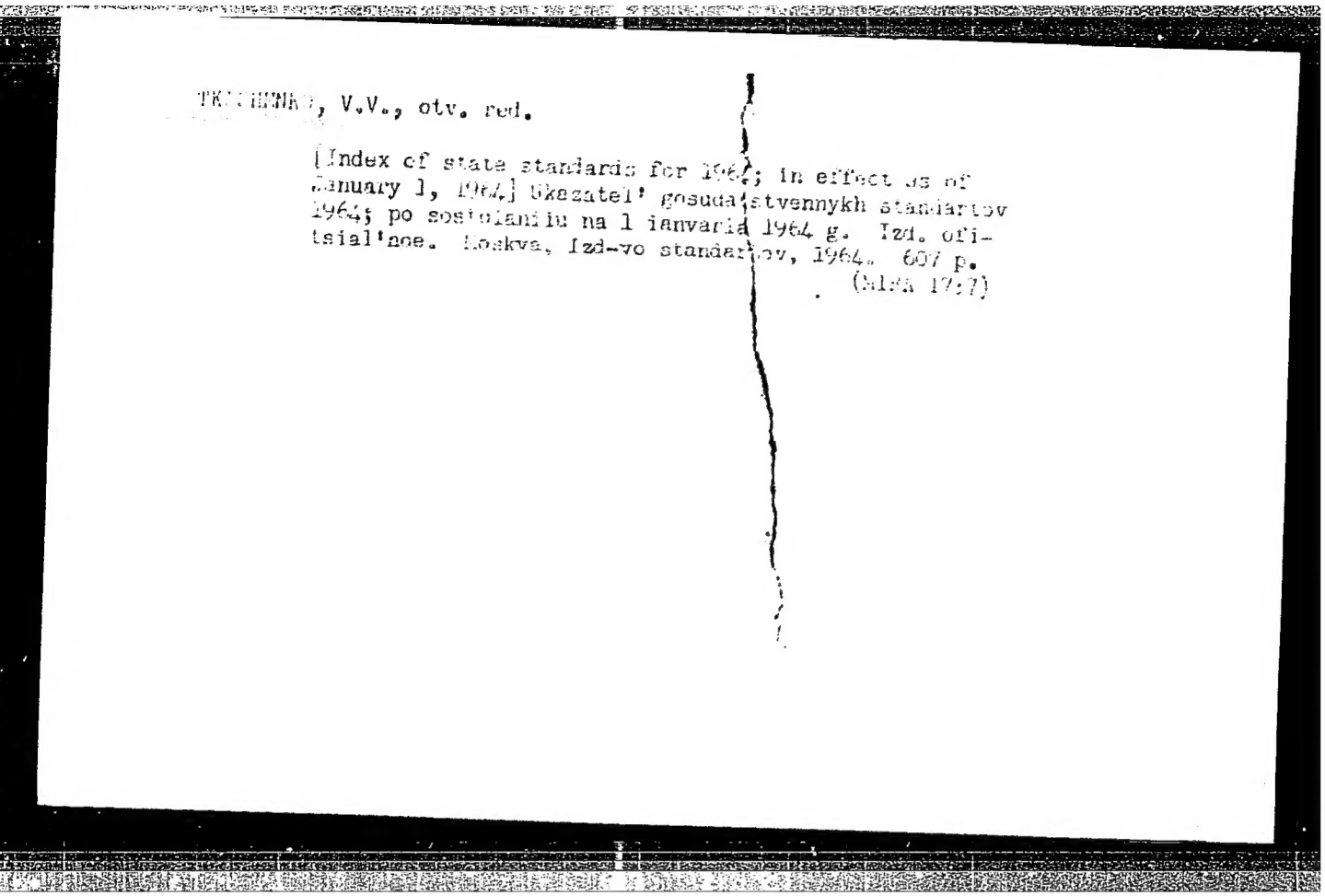
Further utilization of resources in standardization.
Standartizatsiia 27 no.1:3-6 Ja '63. (MERA 17:4)



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Report U-1505, 4 Oct. 1951.

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(Reinforced concrete construction)

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TKACHENKO, Ye.

In the struggle for technical progress. Mor.flot 20 no.10:40-42 O '60.
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(Hydraulic structures)
(Azov-Black Sea Territory--Marine engineering)

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Fight for speed. Kryl. rod. 15 no.5:12-13 My '64.
(MIRA 17:8)

TKACHENKO, Ye.A.

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Avt.i trakt.prom. no.3:47 Mr '57. (MLRA 10:5)
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1. Glavnyy spetsialist po sel'skokhzyaystvennomu mashinostroyeniyu planovo-proizvodstvennogo upravleniya Leningradskogo soveta narodnogo khozyaystva (for Tkachenko).
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1. TKACHENKO, Ye. A.

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BYKOV, V.T.; TKACHENKO, Ye.A.

Electron microscope studies of natural sorbents of Siberia and Far East. Report No.1: Diatomites and tufadiatomites. Soob. DVFAN SSSR no.17:39-42 '63. (MIRA 17:9)

1. Dal'nevostochnyy filial im. V.L. Komarova Sibirskogo otdeleniya AN SSSR.

TKACHENKO, Ye.A.

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Zav.lab. 29 no.8:965-966 '63. (MIRA 16:9)
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TKACHENKO, Ye.R., polkovnik med.sluzhby

Experience in military medical examinations. Voen-med.zhur. no.12 6-8 D '55 (MIRA 12:1)
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Possibility of using a mixture of isotopes of Sr^{89} and Sr^{90} Y^{90} in direct radiometry. Radiokhimia 4 no.4:516-518 '62. (MIRA 15:11)

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Analysis of the sorption capacity of iron hydroxide. Trudy Ural. politekh.inst. no.121:39-44 '62. (MIRA 16:5)

(Iron hydroxides) (Sorption)

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TKACHENKO, Ye.R., polkovnik meditsinskoy sluzhby; BOYKO, V.A., podpolkovnik meditskinskoy sluzhby

Measurement of the degree of motion in joints during the examination of military personnel and recruits. Voen.-med. zhur. no.5:48-53 My '60. (MIRA 13:7)

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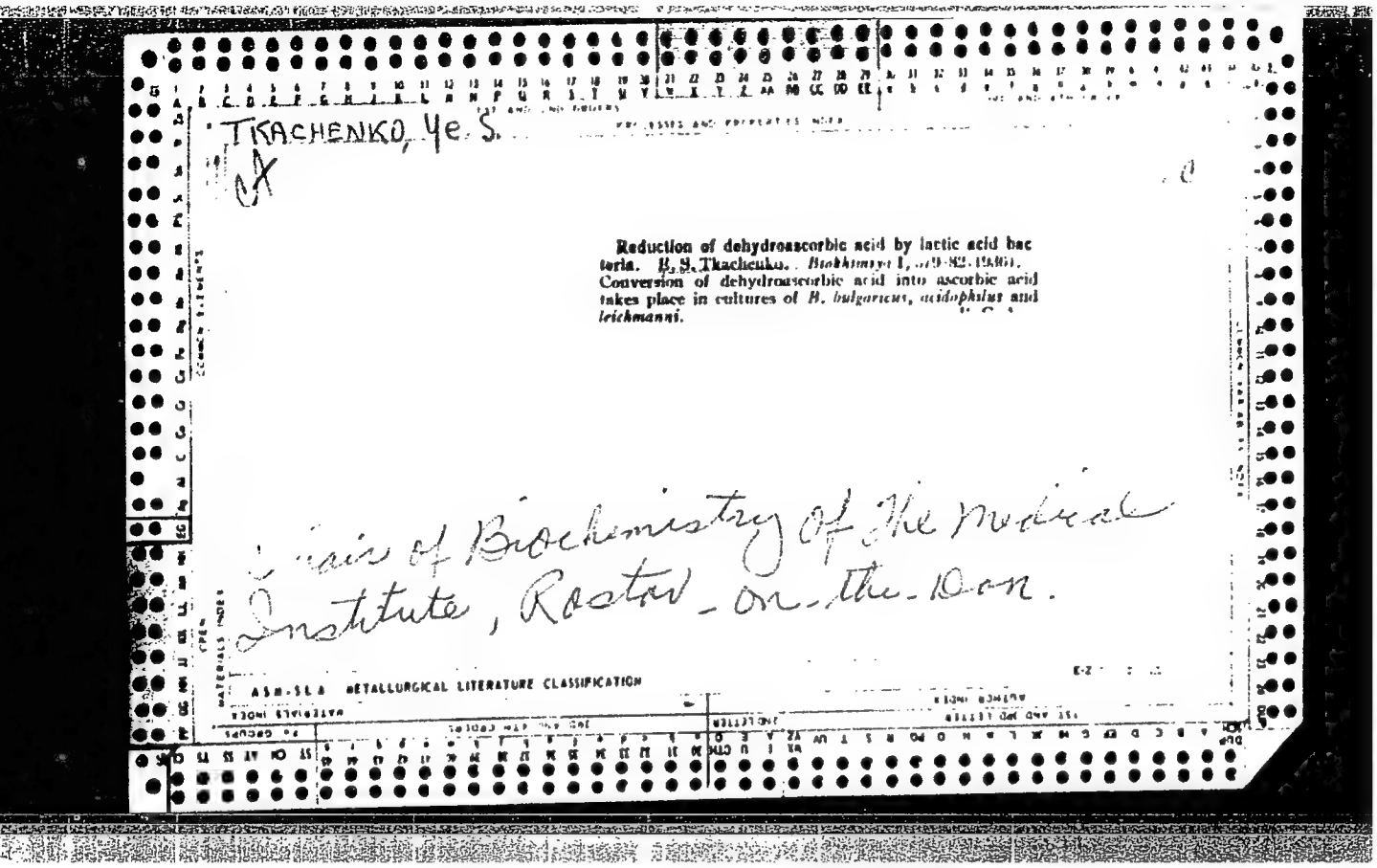

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ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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Vitamin "B," content of mutton preserved by sublimation. Izv. vys. ucheb. zav.; pishch. tekh. no. 2:86-87 '61. (MIRA 14:5)

1. Rostovskiy-na-Donu meditsinskiy institut. Kafedra gigiyeny pitaniya.

(Mutton) (Thiamine)

TKACHENKO, Ye.S.

Chemical properties of poisons causing gastrointestinal aleukias. Vop.pit. 14 no.2:50 Mr-Ap '55. (MLRA 8:6)

1. Iz kafedry biokhimii Rostovskogo-na-Donu meditsinskogo instituta.

(GRAIN,
millet causing gastrointestinal dis. in animals)
(GASTROINTESTINAL DISEASES, experimental,
caused by millet)

ROZENTSVAYG, A.M., dots., TKACHENKO, Ye.T., kand.med.nauk, PTIOTROVICH, Ye.M. vrach.

Effectiveness of antibacterial and tissue therapy in neyromyelitis optica. Oft.zhur. 13 no.4:232-235 '58 (MIRA 11:8)

1. Iz kliniki nervnykh bolezney i glaznogo otdeleniya Odesskoy oblastnoy klinicheskoy bol'nitsy.
(OPTIC NERVE--DISEASES)

TKACHENKO, Ye.T., kand.med.nauk

Some results of surgery in concomitant unilateral strabismus.
Oft.zhur. 13 no.5:273-277 '58 (MIRA 11:10)

1. Iz glaznogo otdeleniya (zav. - kand.med.nauk Ye.T. Tkachenko) Odesskoy oblastnoy klinicheskoy bol'nitsy.
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(Airplanes--Aerodynamics)

TKACHENKO, Ye. N.

OTDEL'NOV, P.V.; NIKONOV, V.A.; SINITSIN, I.T.; TSOGOL, A.K.; SOLOV'YEV, V.M.; KATS, D.Ya.; TKACHENKO, Ye.N.; SDVIZHKOV, M.Ye.; MARTYNOV, A.D., inzhener-polkovnik, redaktor; SOKOLOVA, G.F., tekhnicheskiy redaktor

[Machining metals during machine repairing] Obrabotka metallov pri remonte mashin. Moskva, Voen.izd-vo M-va obor.SSSR, 1957. 463 p. (MLRA 10:7)
(Machinery--Maintenance and repair)
(Metal work)

TKACHENKO, Ye.S.

Vitamin C content of raspberries dried by sublimation. Kons. i ov. prom. 13 no.3:15 Mr '58. (MIRA 11:4)

1. Rostovskiy-na-Donu meditsinskiy institut.
(Raspberries--Drying) (Ascorbic acid)

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B006/B063

21.5300

AUTHORS: Voznesenskiy, S. A. (Deceased), Sereda, G. A., Baskov, L. A., Tkachenko, Ye. V., Bagretsov, V. F.

TITLE: The Problem of Flotation in Decontamination of Radioactive Effluents

PERIODICAL: Atomnaya energiya, 1960, Vol. 9, No. 3, pp. 208 - 213

TEXT: The present paper gives the results of experiments on flotation with iron hydroxide in radioactively contaminated effluents which were artificially produced and contained the following uranium fission fragments: Sr^{90}, Pm^{147}, and Ru^{106} - Rh^{106} as chlorides, Zr^{95} - Nb^{95} as oxalates in solution. All preparations examined were free of carriers, and chemically and radiochemically pure. The initial specific activity of the deposit was 0.03 - 1.0 microcurie referred to 1 g of iron hydroxide. The deposit (iron hydroxide plus adsorbed isotopes) was brought to float in samples of 100 ml in a laboratory apparatus (500 ml; 4300 - 5000 r.p.m.) All experiments were made at a mixing rate of 4600 r.p.m. (2 min) which

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The Problem of Flotation in Decontamination of Radioactive Effluents

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proved to be an optimum in previous tests. Each experiment was performed three or four times at 17-19°C. They were intended to determine the coefficient of flotation K_{fl} (measure for the reduction of the deposit volume). Results are diagrammatically shown. First, the optimum amount of the flotation reagent per gram of floating iron hydroxide deposit was determined (amount of deposit: 7 g/l; solution: pH=8.5). Fig. 1 shows K_{fl} as a function of the amount of the flotation reagent. The optimum amount is 1 g per 1 g of $Fe(OH)_3$. Further additions did not increase K_{fl}. The pH of the solution has a considerable effect on K_{fl}. Fig. 2 shows the effect of the amount of NaOH upon K_{fl}. The peak value of K_{fl} (~8.0) is reached in a neutral medium. At 300 mg/l and more, $K_{fl} \approx 3.8$ and is independent of the pH. Fig. 3 shows K_{fl} as a function of the concentration of iron hydroxide in the suspension. K_{fl} first drops with an increase of concentration and remains constant at about 8 g/l. Furthermore, the authors studied the effect of aging of the iron hydroxide deposit upon

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The Problem of Flotation in Decontamination of Radioactive Effluents

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flotation (Table 2). This table indicates that the time of flotation required for 2000 r.p.m. increases with the age of the deposit. The authors also studied the effect of various anions and cations, particularly Ca^{2+} and CO_3^{2-}, upon the froth stability. The results of the respective experiments are illustrated in Figs. 4 and 5. Table 3 lists the values of activity in the solutions in per cent:

Isotope	Initial solution	Solution after coagulation	Solution after flotation
Ru^{106}-Rh^{106}	100	37.60	-1.27
Pm^{147}	100	0.40	-0.03
Sr^{90}	100	6.50	+0.02
Zr^{95}-Nb^{95}	100	1.10	+0.01

The negative sign indicates that during flotation part of radioactivity passed over from the deposit into the solution, while the positive sign indicates the reverse process. The results are finally discussed in

The Problem of Flotation in Decontamination of Radioactive Effluents

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detail. As there is no significant desorption of radioisotopes during flotation, the authors' method appears to be very encouraging. The flotation reagents had been made available by V. G. Plyusnin of the Institut khimii UFANa (Institute ~~of Chemistry~~ of UFAN). There are 5 figures, 3 tables, and 11 references: 5 Soviet and 5 US

SUBMITTED: March 26, 1959

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S/186/61/003/001/015/020
A051/A129

21,3200

AUTHORS: Yegorov, Yu.V., Pushkarev, V.V., Tkachenko, Ye.V.

TITLE: Coprecipitation of micro-quantities of Sr^{90} with active manganese dioxide in the presence of macro-quantities of barium and potassium

PERIODICAL: Radiokhimiya, v 3, no 1, 1961, 87-89

TEXT: The authors have established that the competition of micro-quantities of Sr^{90} with macro-quantities of calcium and barium in their coprecipitation with active manganese dioxide obeys an equation, whereby the logarithm of the distribution coefficient of Sr^{90} is linearly dependent on the logarithm of the molar ratio of the total quantity of the analogue to the sorbent. The given equation is said to be derived from the law of active masses. The authors further show that barium is stronger than calcium in suppressing the sorption of Sr^{90} with active manganese dioxide; this fact leads to the conclusion that the formed sorbing compounds of the calcium and barium manganate

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Coprecipitation of micro-quantities of Sr^{90} ...

type have varying stability, i.e., the corresponding compound of calcium is more subjected to hydrolysis than the other. The relationship described above was derived from the following considerations: 1) the sorbent is located in the range of saturation by the analogue (barium or calcium), 2) the pH of the solution is constant, 3) the ratio of the activity coefficients of the analogues and Sr^{90} in the solid phase is constant, which is the same as the absence of a noticeable interaction between the adsorbed cations (Ref 7). The factors used where: A_T the quantity of the analogue in the solid phase (in moles), A_{liquid} the quantity of the analogue in the liquid phase (in moles), $A_o = A_T + A_{liquid}$ the total quantitiy of the analogue in the system (in moles), ϵ the distribution coefficient of Sr^{90} equal to the ratio of the adsorbed part to the equilibrium part, m the mass of the sorbent (in moles), z_1 and z_2 the charges of the ions of the analogues and Sr^{90}. The following relationships are designated by A and G:

$$A = \frac{A_o}{m} \quad (1) \qquad G = \frac{A_T}{m} \quad (2)$$

then on the basis of the law of active masses the expression:

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Coprecipitation of micro-quantities of Sr^{90} ...

$K_o = \frac{A_{liquid}}{A^{1/z_1}} \cdot \varepsilon^{1/z_2}$ (3) is found, where K_o = const under conditions of constancy of the temperature; in the given case the volume of solution and sorbent mass are also constant.

If $K_o^{z_1} = K$, and transforming (3) we obtain $K = \varepsilon^{z_1/z_2} (\frac{A_o}{A_T} - 1)$ (4).

Taking into consideration (1) and (2) and taking the logarithm of (4), the following equation is obtained:

$$\lg \varepsilon = B - \frac{z_2}{z_1} \lg (A-G) \quad (5), \text{ where } B = \lg(KG)^{z_2/z_1}.$$

An analysis of the obtained relationship showed that under the given conditions the sorbent has a capacity of 0,38 mM Sr/mM MnO_2. For sufficiently high values of A, formula (5) is written approximately:

$$\lg \varepsilon = B - \frac{z_2}{z_1} \lg A \quad (6).$$

The experimental data obtained agree favorably with this expression. The absolute value of the angle co-

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Coprecipitation of micro-quantities of Sr^{90} ...

efficient $\frac{z_2}{z_1}$ in this range is equal to 1 for both analogues. This proves the equality of the ion charges of these analogues and Sr^{90} during the exchange process. The macro-quantities of barium have a stronger depressing action on the sorption of the micro-concentrations of Sr^{90} than equimolar quantities of calcium. This is thought to be due to the different relationship of the analogues to the sorbent. There are 6 formulae and 2 graphs.

Figure 1: Coprecipitation of strontium with active manganese dioxide. Longmuir's isotherm.
t°=17-19°C, strontium chloride was labelled with Sr^{90}. Experiments without access of air.

33183

S/186/61/003/006/002/010
E040/E185

21.4200

AUTHORS: Yegorov, Yu.V., Krylov, Ye.I., and Tkachenko, Ye.V.

TITLE: Contribution to the theory of the distribution of micro-quantities of radioactive strontium between hydrated oxides and the solution

PERIODICAL: Radiokhimiya, v.3, no.6, 1961, 654-661

TEXT: In spite of the considerable scientific and technical importance of the processes of radioisotope adsorption on metal hydroxide, the mechanism of the process is still far from being elucidated, especially at micro-concentrations of radioisotopes. and no unified ideas have so far been formulated for the co-precipitation of radioisotopes with the hydrates. These problems are analysed theoretically and a series of equations is derived for the absorption of micro-quantities of the cations of radioisotopes (which do not form radiocolloids) by the precipitates of metal hydroxides capable of behaving as cationites in acid media. The following assumptions were made in the derivation of the equations: 1) the hydrated oxides have ion-exchange properties and, under certain definite conditions, behave as a cationite in

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Contribution to the theory of S/186/61/003/006/002/010
E040/E185

acid medium; 2) the law of active mass is applicable to the system; and 3) the radioactive isotope behaves as an electrolyte at infinite dilution. The equations were checked by plotting experimental data obtained for the absorption of radioactive strontium (Sr^{90}) by ferric hydroxide and active MnO_2 as a function of the pH of the medium. The S-shaped curves obtained represent a general function of the type $y = C + mpH$ and thereby confirm the correctness of the assumptions made, especially with regard to the ion-exchange character of the sorption of strontium by metallic hydroxides. I.Ye. Starik, A.I. Novikov, L.G. Kuz'mina and Yu.V. Morachevskiy are mentioned in the article in connection with their contributions in this field. There are 3 figures and 22 references: 12 Soviet-bloc, 1 Russian translation from non-Soviet-bloc publication, and 9 non-Soviet-bloc. The four most recent English language references read as follows:
Ref.3: M.H. Kurbatov, G.B. Wood, J.D. Kurbatov.
J. Chem. Phys., v.19, 2, 258 (1951).

Card 2/3

Contribution to the theory of ... S/186/61/003/006/002/010
E040/E185

Ref.4: M.H. Kurbatov, G.B. Wood, J.D. Kurbatov.
J. Phys. a. Coll. Chem., v.55, 7, 1170 (1951).
Ref.5: M.H. Kurbatov, G.B. Wood,
J. Phys. Chem., v.56, 6, 698 (1952).
Ref.16: A. Kozawa, J. Electrochem. Soc., v.106, 7, 552 (1959).

SUBMITTED: October 31, 1960

Card 3/3

ACCESSION NR: AP4012265 S/0089/64/016/001/0048/0051

AUTHOR: Pushkarev, V. V.; Yegorov, Yu. V.; Tkachenko, Ye. V.; Zolotavin, V. L.

TITLE: The clearing and purification of radioactive sewage by the flotation method

SOURCE: Atomnaya energiya, v. 16, no. 1, 1964, 48-51

TOPIC TAGS: ferrous hydroxide, aluminum hydroxide, flotation method, ion exchange, titration method, nephelometric method, residue, settling method, solvation

ABSTRACT: The flotation of ferrous and aluminum hydroxides to purify radioactive sewage water containing surface-active, detergent, and complex-forming substances has been investigated. The moisture of the floated hydroxides and the effective elimination of the hardsalt [sylvite], detergents, and certain radioactive elements from the solution were studied. Elimination of radioactivity from the drain water was determined by the extraction of Sr^{90}, Y^{90}, and Nb^{95}. The temperature maintained in the course of all experiments was 16—20 C. Preliminary tests revealed sulfate soap to be a satisfactory flotation agent for the selected hydroxides. Comparison of

Card 1/2

ACCESSION NR: AP4012265

the flotation and settling methods of water purification showed that the residue left by the flotation method is smaller in volume and contains less moisture than the residue obtained by the settling method under similar conditions. Also, the flotation method took much less time than the settling method in clearing the sewage water. Some industrial enterprises use ferrous salts as well as aluminum salts, or a mixture of both, as a coagulant for the purification of their waste waters. It was found that in a low-alkaline medium aluminum hydroxide can clarify a solution by either the settling or the flotation method. Orig. art. has: 3 tables.

ASSOCIATION: none

SUBMITTED: 28Jan63 ATD PRESS: 3045 ENCL: 00

SUB CODE: NP NO REF SOV: 007 OTHER: 003

Card 2/2

ACCESSION NR: AP4038560 S/0080/64/037/005/0946/0951

AUTHORS: Vlasov, V.G.; Tkachenko, Ye.V.

TITLE: Reduction of - uranium dioxide with solid carbon

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 5, 1964, 946-951

TOPIC TAGS: uranium betadioxide reduction, uranium dioxide, carbothermal reduction mechanics, uranium reduction, solid carbon, beta uranium dioxide

ABSTRACT: In view of the fact that the mechanics of metal oxide reduction with carbon at elevated temperatures are studied the least in theoretical metallurgy, the authors undertook a comprehensive study of how β-uranium dioxide, U_4O_9 can be reduced by solid carbon (acetylene soot) at 700-950C to uranium dioxide, UO_2, or more precisely,

$$U_4O_9 \rightarrow UO_{2+2x_{max}} \longrightarrow UO_{2+x}$$

The composition of these uranium oxides is determined radiologically, with x varying between 0.18 and 0.02. This reduction was effected

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ACCESSION NR: AP4038560

in a vacuum and the interaction of carbon, carbon monoxide and dioxide undergoes a detailed scrutiny resulting in the conclusion that the complex process of carbo/thermal reduction of U_4O_9 is a combination of indirect reduction and stepwise gasification of carbon. Both processes stand in close physico-chemical and thermal relationship. Orig. art. has: 3 figures, 5 formulas, 2 tables.

ASSOCIATION: None

SUBMITTED: 07Jun62

ENCL: 00

SUB CODE: IC

NR REF SOV: 009

OTHER: 006

Card 2/2

PUSHKAREV, V.V.; YEGOROV, Yu.V.; TKACHENKO, Ye.V.; PUZAKO, V.D.

Sorption of microquantities of strontium-90 by ferric hydroxide in the presence of alkaline earth metals. Izv.vys.ucheb.zav.; khim.i khim.tekh. 4 no.1:60-63 '61. (MIRA 14:6)

1. Ural'skiy politekhnicheskiy institut imeni S.M.Kirova, kafedra radiokhimii.

(Strontium—Isotopes) (Sorption)

PUSHKAREV, V.V.; TKACHENKO, Ye.V.; YEGOROV, Yu.V.; LYUBIMOV, A.S.

Sorption of some radioactive isotopes from aqueous solutions by active manganese dioxide. Radiokhimia 4 no.1:49-54 '62. (MIRA 15:4)

(Radioisotopes) (Sorption) (Manganese oxides)

S/186/62/004/003/019/022
E075/E436

AUTHORS: Yegorov, Yu.V., Pushkarev, V.V., Tkachenko, Ye.V.

TITLE: On the influence of ethyl alcohol on the sorption of strontium ions with an active manganese dioxide

PERIODICAL: Radiokhimiya, v.4, no.3, 1962, 371-373

TEXT: The object of the work was to elucidate the nature of the connection between the parameter of sorption affinity a from the Langmuir isotherm, and the solution properties. The Langmuir isotherm is given as

$$\frac{C_p}{C_c} = \frac{1}{\Gamma \cdot a} + \frac{1}{\Gamma} C_p \qquad (1)$$

where C_p - equilibrium concentration of Sr^{2+} in solution; C_c - adsorption of Sr^{2+}, Γ - capacity of sorbent. An active MnO_2 was used as a sorbent. The compound undergoing distribution was $SrCl_2$ labelled with Sr^{89}, and the non-aqueous solvent ethyl alcohol. The latter was added to the solution of $SrCl_2$ in water containing a coagulated MnO_2 sol. It was found

Card 1/2

On the influence of ethyl ...

that the capacity of the sorbent is the same in all the experiments. Parameter a increases with the decreasing dielectric constant of the medium. It was shown that when the dielectric constant of the solution changes from 58.0 to 75.5, there exists a linear dependence of lg a on the reciprocal of dielectric constant of the alcohol-water solution. There are 1 figure and 1 table.

SUBMITTED: May 12, 1961

TKACHENKO, Ye.V.; PUSHKAREV, V.V.; YEGOROV, Yu.V.

Adsorption of strontium by manganese dioxide from water-ethanol solutions. Izv.vys.ucheb.zav.; khim.i khim.tekh. 5 no.1:172-174 '62. (MIRA 15:4)

1. Ural'skiy politekhnicheskiy institut imeni Kirova, kafedra radiokhimii.
(Strontium) (Adsorption) (Manganese oxides)

S/126/63/015/002/008/033
E039/E420

AUTHORS: Zhukovskiy, V.M., Tkachenko, Ye.V., Vlasov, V.G.

TITLE: On the question of phase conversion in reduced U_4O_9

PERIODICAL: Fizika metallov i metallovedeniye, v.15, no.2, 1963, 210-214

TEXT: The contradictory work of a number of authors on the state and structure of the phase compositions in the U - O system for the range UO_2 - $UO_{2.25}$ is examined. The dependence of the density and parameters of the cubic lattice on the composition of the solid phase formed in reduced U_4O_9 when decomposed by ammonia and solid carbon is investigated. With increase in quantity of introduced oxygen the density of the oxide is increased and the lattice parameter decreased. When the oxygen content of the oxide is changed it is necessary to alter the charge on some of the uranium ions in order to maintain electrical neutrality. In particular in UO_2 uranium is found only in the form of U^{4+} ions (according to the authors' data), the lattice parameter is 5.47 Å and the density is 10.7 g/cm^3. In the case of U_4O_9 which has a lattice parameter of 5.44 Å and a density of 11.4 g/cm^3, it is necessary to alter the

Card 1/2

S/126/63/015/002/008/033
E039/E420

On the question of phase ...

charge on some of the uranium ions from U^{4+} to U^{5+} or U^{6+}. The substitution of some U^{4+} ions by the smaller U^{5+} and U^{6+} ions may lead to a decrease in the lattice parameter for U_4O_9 in spite of the introduction of more oxygen (the radii of the U^{4+}, U^{5+} and U^{6+} ions are 1.05, 0.91 and 0.79 Å respectively). Densities measured experimentally compare well with those determined from X-ray diffraction analysis. The results are in agreement with the statement that the phase of UO_{2+x} has a cubic lattice of the fluorite type with disordered introduction of surplus oxygen and four atoms of uranium in the elementary cell. There are 3 figures.

ASSOCIATION: Ural'skiy politekhnicheskiy institut im. S.M.Kirova
(Ural Polytechnical Institute imeni S.M.Kirov)

SUBMITTED: July 7, 1962

Card 2/2

S/126/63/015/002/015/033
E193/E383

AUTHORS: Tkachenko, Ye.V. and Vlasov, V.G.

TITLE: Phase-transformations during carbon reduction of uranium oxides

PERIODICAL: Fizika metallov i metallovedeniye, v. 15, no. 2, 1963, 239 - 243

TEXT: Acetylene soot was used to reduce UO_3 at 400 - 500 °C, U_3O_8 at 650 - 850 °C and U_4O_9 at 700 - 950 °C. The kinetics of the reduction were studied by continuous weight measurements, X-ray diffraction being used to follow the phase-transformations. The results are reproduced in Figs. 1, 2, 3. In each figure, the rate of reduction ($dp/d\tau$ for UO_3 in Fig. 1, $df/d\tau$ for U_3O_8 in Fig.2 and $dq/d\tau$ for U_4O_9 in Fig. 3) is plotted against the degree, % (p, f and q, respectively) of reduction of the respective substances, the composition of the solid phase at various stages of the process being shown at the bottom of each figure. Fig. 1 relates to reduction of UO_3 carried out at 1 - 400, 2 - 425,

Card 1/3

Phase-transformations during ....

3 - 450, 4 - 475 and 5 - 500 °C; Fig. 2 shows the reduction of U_3O_8 at 1 - 650, 2 - 700, 3 - 725, 4 - 750, 5 - 775, 6 - 800 and 7 - 850 °C and Fig. 3 relates to reduction of U_4O_9 at 1 - 700, 2 - 750, 3 - 800, 4 - 850 and 5 - 950 °C. The following phase-transformations were postulated for each of the processes studied:

a) $UO_{3\,amorph.} \rightarrow UO_{2.91} \rightarrow U_3O_8 \rightarrow U_3O_{8-z_{max}}$;

b) $U_3O_8 \rightarrow U_3O_{8-z_{max}} \rightarrow U_4O_9 \rightarrow UO_{2+x_{max}} \rightarrow UO_{2+x}$;

c) $U_4O_9 \rightarrow UO_{2+x_{max}} \rightarrow UO_{2+x}$.

There are 3 figures.

ASSOCIATION: Ural'skiy politekhnicheskiy institut im.S.M.Kirova (Ural' Polytechnical Institute im. S.M. Kirov)

SUBMITTED: July 17, 1962

S/126/63/015/002/013/033
E193/E383

Phase-transformations during ....

Fig. 1:

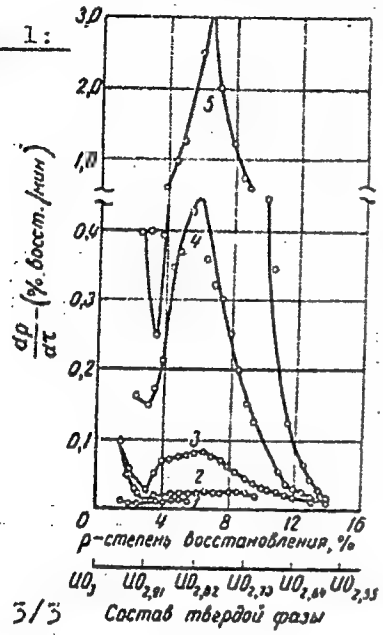


Fig. 2:

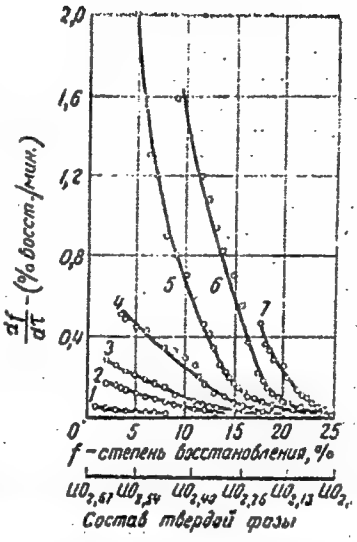
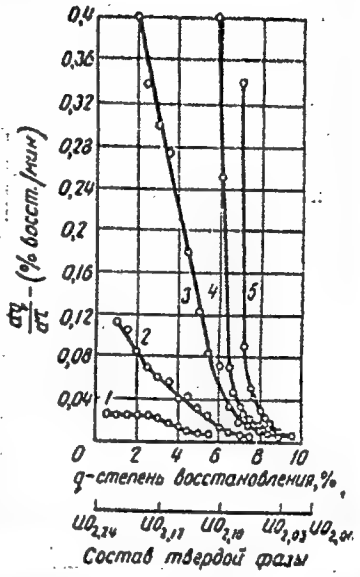


Fig. 3:



Card 3/3

VLASOV, V.G.; TKACHENKO, Ye.V.

Reduction of uranium β-dioxide with solid carbon. Zhur. prikl. khim. 37 no. 5:946-951 My '64. (MIRA 17:7)

L 23857-66 EWT(m)/EPF(n)-2/EWP(t) IJP(c) ES/JD/WW/JG/GS

ACC NR: AT6009941 (A) SOURCE CODE: UR/0000/65/000/000/0197/0202

AUTHOR: Tkachenko, Ye. V.; Vlasov, V. G.

ORG: Ural Polytechnic Institute imeni S. M. Kirov (Ural'skiy politekhnicheskiy institut)

TITLE: Reduction of gamma-uranium trioxide by solid carbon

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Issledovaniya v oblasti khimii i tekhnologii mineral'nykh soley i okislov (Studies in the field of chemistry and technology of mineral salts and oxides). Moscow, Izd-vo Nauka, 1965, 197-202

TOPIC TAGS: uranium compound, carbon, chemical reduction

ABSTRACT: A kinetic and x-ray diffraction study of the processes involved in the reduction of orthorhombic uranium trioxide (γ-UO_3) by solid carbon at 475°-580°C is described. It is shown that in analyzing the reduction mechanism, it is necessary to consider not only the participation of carbon but also the dissociation of the oxide and the direct interaction of the reagents in the solid phase. X-ray diffraction analysis established that γ-UO_3 does not have a region of homogeneity, and that the phase transformations taking place during the reduction with carbon are:

$$\gamma\text{-}UO_3 \rightarrow U_3O_{8+z_{max}} \rightarrow U_3O_8 \rightarrow U_3O_{8-z_{max}}$$

Card 1/2

L 23857-66

ACC NR: AT6009941

Kinetic data showed that the temperatures of the start of an appreciable reduction of γ-UO_3 and its dissociation in vacuum are close to each other. It is concluded that the principal part in the reduction of γ-UO_3 is played by the gas phase, i. e., the reduction with participation of carbon monoxide; however, this process is associated with a substantial dissociation of γ-UO_3. The contact reduction of γ-UO_3 is significant only at the start of the reaction. Orig. art. has: 3 figures, 1 formula.

SUB CODE: 07/ SUBM DATE: 04May64/ ORIG REF: 015/ OTH REF: 009

Card 2/2dda

L 32760-66 EWT(m)/EWP(e)/EWP(t)/ETI IJP(c) ES/JD/WW/WH

ACC NR: AP6016333 (N) SOURCE CODE: UR/0149/65/000/006/0093/0098

AUTHORS: Tkachenko, Ye. V.; Vlasov, V. G. 37 B

ORG: Ural Polytechnic Institute, Physico-Technical Faculty (Ural'skiy politekhnicheskiy institut, Fiziko-tekhnicheskiy fakul'tet)

TITLE: The reduction of uranous-uranic oxide by means of solid carbon 21

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 6, 1965, 93-98

TOPIC TAGS: uranium compound, graphite, carbon dioxide, carbon monoxide, chemical reduction

ABSTRACT: The reduction of uranous-uranic oxide with graphite 5 and carbon black was investigated. The investigation supplements the results of Ye. V. Tkachenko, and V. G. Vlasov (Fizika metallov i metallovedeniye, t. 15, 2, 239, 1963). The experimental procedure followed is described by V. G. Vlasov, Ye. V. Tkachenko, and A. G. Lebedev (Zh. prikl. khimii, t. 37, 7, 1414, 1964). The reduction was carried out at 675—800C and 650—800C using graphite and carbon black respectively. The experimental results are presented graphically (see Fig. 1). It was found that the gaseous phase during reduction consists almost entirely of carbon monoxide. The accumulation of gaseous products during reduction does not have a noticeable effect on the rate of

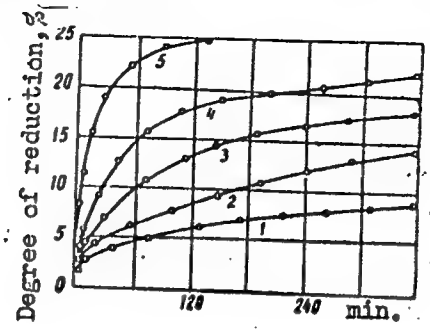
UDC: 669.822

Card 1/2

L 37760-66

ACC NR: AP6016333

Fig. 1. Change in the degree of reduction of U_3O_8 (derived from amorphous UO_3) by means of graphite as a function of time at: 1 - 675C, 2 - 700C, 3 - 725C, 4 - 750C, 5 - 800C.



reduction. The carbo-thermal reduction of uranous-uranic oxide is accomplished almost entirely by carbon monoxide. It is suggested that the exothermicity of the process

$$1{,}6\ U_3O_8 + C = 1{,}2\ U_4O_9 + CO_2.\quad \Delta H_{298} = -22\,530\ \text{cal}$$

is mainly responsible for the sharp increase in the rate of the reaction

$$C + CO_2 = 2CO,$$

and this in turn makes it possible to reduce uranous-uranic oxides at relatively low temperatures. Orig. art. has: 6 graphs.

SUB CODE: 11/ SUBM DATE: 29Jun64/ ORIG REF: 010/ OTH REF: 001

Card 2/2

[illegible], I.I.; [illegible]TOV, A.N.; VLASOV, V.G.

Reduction of the hexagonal modification of uranium trioxide by solid carbon. Izv. vys. ucheb. zav.; tsvet. met. 8 no.3: 100-107 '65. (MIRA 18:9)

1. Ural'skiy politekhnicheskiy institut, fiziko-tekhnicheskiy fakul'tet.

L 00087-66 EWT(m)/EPF(n)-2/EWP(t)/EWP(b) IJP(c) ES/JD/WW/JG
ACCESSION NR: AP5022339 UR/0149/65/000/003/0100/0107
661.879

AUTHOR: Tkachenko, Ye. V.; Beketov, A. R.; Vlasov, V. G.

TITLE: Reduction of the hexagonal modification of uranium trioxide by solid carbon

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 3, 1965, 100-107

TOPIC TAGS: uranium compound, carbon, chemical reduction

ABSTRACT: The article gives the results of an investigation, by kinetic and X-ray means, of the reduction of the hexagonal modification of uranium trioxide (alpha-UO_3) by solid carbon. The reducing agent was acetylene carbon black (ash content 0.07%) previously held in a vacuum dryer for ten hours at 250C. The alpha-uranium trioxide was prepared by calcination of uranium peroxide at 520C for three hours. The oxide obtained had a brown color, a density of 6.74 grams/cm^2, and a specific surface of 5.3 $meter^2$/gram. X-ray analysis indicated a hexagonal structure. The tests were carried out in a high vacuum unit (pressure not more than 10^{-2} mm Hg) with constant control of the weight changes of the solid reagents. The reduction was studied in the temperature region of 500-615C

Card 1/2

L 00087-66
ACCESSION NR: AP5022339

because at lower temperatures the reaction is too slow and at higher temperatures it is too fast for experimental determinations. It was established that the reduction of alpha-uranium trioxide by acetylene carbon black at a noticeable rate starts at 440C. It was also established that with an increase in temperature in the pressure of carbon dioxide in the reaction zone, and with an increased degree of contact between the reagents, the rate of the reduction process is considerably improved. X-ray analysis shows that alpha-UO_3 and U_3O_8 form a continuous series of solid solutions. During this process, within the limits of a single phase there is observed a transition from hexagonal symmetry (alpha-UO_3) to orthorhombic (U_3O_8). Orig. art. has: 3 figures

ASSOCIATION: Ural'skiy politekhnicheskiy institut. Fiziko-tekhnicheskiy fakul'tet (Ural Polytechnic Institute, Faculty of Physico-technical Studies)

SUBMITTED: 13Apr64 ENCL: 00 SUB CODE: IC, GC

NR REF SOV: 016 OTHER: 009

Card 2/2

TKACHENKO, Ye.V.; VLASOV, V.G.; SEMAVIN, Yu.N.

Carbothermal reduction of higher uranium oxides in the presence of alkali metal carbonate additions. Zhur. prikl. khim. 38 no.7:1447-1451 Jl '65. (MIRA 18:7)

SOURCE: Zhurnal prikladnoy khimii, . 38, no. [illegible], 1965, [illegible]

TOPIC TAGS: uranium oxide, carbothermic reduction, alkali metal carbonate

ABSTRACT: The effect of lithium, sodium, and potassium carbonates on the vacuum carbothermic reduction of amorphous uranium trioxide at 1050 and uranyl uranate

Card 1/2

L 6[illegible]2-6[illegible]

ACCESSION NR: AP5017773

carbonates from the metal oxide and carbon dioxide, and reaction of the carbo- [illegible] oxide [illegible] forming oxalates. Orig. art. [illegible] and 4 formulas.

ASSOCIATION: None

SUBMITTED: 11Dec64 ENCL: 00 SUB CODE: IC

NO REF SOV: 018 OTHER: 003

Card 1/2

ACCESSION NR: AP4029535 S/0149/64/000/002/0135/0139

AUTHOR: Tkachenko, Ye.V.; Vlasov, V.G.; Semavin, Yu.N.

TITLE: The effect of a method of introducing K_2CO_3 additives on the kinetics of carbon thermal reduction of the higher oxides of uranium

SOURCE: IVUZ. Tsvetnaya metallurgiya, no.2, 1964, 135-139

TOPIC TAGS: uranium trioxide, uranium, octoxide, potassium carbonate, additive,

ABSTRACT: The authors state the potassium carbonate, on decomposing, activated reagents which caused an increase in the reduction speed; on the other hand, the reaction of potassium corbonate with uranium oxides led to the formation of uranates on the surface of the oxides reduced which in turn screened a portion of the surface and, thereby, lowered the reduction speed. Therefore, the total effect of the potassium carbonate additive on the carbon thermal reduction of uranium oxides was determined by the ratio of 2 of these factors which act in opposing directions. In the reduction of UO_3 (460°), the action of the potassium carbonate additives basically led to the inhibition of the reduction process due to the screening effect of potassium uranate that was formed. In the reduction of U_3O_8 (700°),along with the formation of uranates, dissociation of K_2CO_3 also occurred. It was established that

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ACCESSION NR: AP4029535

with all the variants of introducing the additives, an acceleration process of U_3O_8 was observed. The greater the degree of the process of acceleration the fewer the potassium uranates were formed. Therefore, the greatest velocity increase occured with the introduction of a dry additive into the reducer. Orig. art. has: 3 figures.

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural Polytechnical Institute)

SUBMITTED: 03Jun63 DATE ACQ: 30Apr64 ENCL: 00

SUB CODE: ML NO REF SOV: 017 OTHER: 000

Card 2/2

VLASOV, V.G.; TKACHENKO, Ye.V.; LEBEDEV, A.G.

Mechanism of the reduction of uranium oxides by solid carbon.
Zhur.prikl.khim. 37 no.7:1414-1420 Jl '64.
(MIRA 18:4)

PUSHKAREV, V.V.; YEGOROV, Yu.V.; TKACHENKO, Ye.V.; ZOLOTAVIN, V.L.

Use of the flotation method in clearing and purifying radioactive waste waters. Atom. energ. 16 no.1:48-51 Ja '64. (MIRA 17:2)

TKACHENKO, Ye.V.; NEUYMIN, A.D.; VLASOV, V.G.; STREKALOVSKIY, V.N.

Temperature dependence of the electric conductiivity of higher uranium oxides. Fiz. met. i metalloved. 16 no.2:193-197 Ag '63. (MIRA 16:8)

1. Ural'skiy politekhnicheskiy institut im. S.M. Kirova i Institut elektrokhimii Ural'skogo filiala AN SSSR.
(Uranium oxides--Electric properties)
(Metals, Effect of temperature on)

TKACHENKO, Ye.V.; NEYMIN, A.D.; VLASOV, V.G.; STREKALOVSKIY, V.N.

Studing the electric conductivity of the system UO_3 - C.
Izv. vys. ucheb. zav.; tsvet. met. 6 no.4:118-122 '63.
(MIRA 16:8)

1. Ural'skiy politekhnicheskiy institut.
(Uranium oxides--Electric properties)

PUSHKAREV, V.V.; TKACHENKO, Ye.V.; YEGOROV, Yu.V. ;KARLOV, V.A.

Adsorption of strontium by active manganese dioxide from water-alcohol solutions. Trudy Ural.politekh.inst.no.121:45-48 '62.
(MIRA 16:5)

(Strontium) (Adsorption) (Manganese oxides)

TKACHENKO, Yu.

Short story about glass. Sov. foto 19 no.12:49 D '59.
(MIRA 13:3)

(Czechoslovakia--Photography, Artistic)
(Czechoslovakia--Glass)

TKACHENKO, Yu.B.; VISSARIONOV, M.M.

Storage of sugar beets at the Karlaman Factory in the 1958/59 production season. Sakh. prom. 33 no.8:46-48 Ag '59.
(MIRA 12:11)

1.Karlamanskiy sakharnyy zavod.
(Karlaman--Sugar beets--Storage)

TKACHENKO, Yu.B.; VISSARIONOV, M.M.

Experience of the Karlaman Sugar Combine in freezing sugar beets.
Sakh.prom. 35 no.7:64-66 Jl '61. (MIRA 14:7)

1. Karlamanskiy sakharnyy kombinat.
(Karlaman—Sugar beets)

MEKLER, I.L., inzh.; TKACHENKO, Yu.D., inzh.; VENEDIKTOV, B.A., inzh.; BELOBORODOV, F.M., inzh.

Using screens for bubbling devices in high-pressure boilers under conditions preventing the downcome of water layers. Teploenergetika 6 no.4:45-48 Ap '59. (MIRA 12:3)

1. Ural'skoye otdeleniye Gosudarstvennogo tresta po organizatsii i ratsionalizatsii elektrostantsiy - Omskaya teploelektrotsentral'-3. (Boilers)

SOV/96-59-4-9/21

AUTHORS: Mekler, I.L., Engineer; ~~Tkachenko, Yu.D.,~~ Engineer; Venedikhov, B.A., Engineer and Beloborodov, F.M. Engineer

TITLE: The Use as Bubbling Devices in High Pressure Boilers of Screens Operating Under Conditions in which the Washing Water Does Not Fall Through Them (Primeneniye shchitov, rabotayushchikh v rezhime neprovalivayushchegosya sloya vody v kachestve barbotazhnykh ustroystv dlya kotlov vysokogo davleniya)

PERIODICAL: Teploenergetika, 1959, Nr 4, pp 45-48 (USSR)

ABSTRACT: At the present time the boiler makers are producing high pressure drum type boilers with two stage evaporation in which all of the steam is washed by bubbling according to the method of the Central Boiler Turbine Institute. In particular cases the Taganrog Boiler Works have installed a third evaporative stage in boilers type TP-230. These devices inside the drum have given good service in condensing power stations except that there has been some difficulty in cleaning them of sludge. In a Heat and Electric Power Station the system may be inadequate. A particular boiler type TP-230-2 was provided with

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two-stage evaporation and all the steam was washed by bubbling (see Fig.1 and 2). It was found on test that the steam delivered by the boiler was not of sufficient purity. Consideration of the operation of the bubbling devices provided by the boiler makers showed that about a third of the useful area of the bubbling device was lost because the washing screens had large unperforated caps in the centre, see Fig.3. It seemed advisable to replace the existing washing device by a simple flat perforated screen operating under such conditions that it was not penetrated by the washing water. Similar screens had previously been used by the Moscow Division of the Central Boiler Turbine Institute for evaporators. Screens of this type were accordingly installed, the general arrangement is as shown in Fig.4. The salty section of the boiler was reconstructed as shown in Fig.5. Tests were then run to determine the silica contents of the steam and water using a photo calorimeter type FEK-M. The tests were carried out at minimum loads of 110-130 tons/hour and

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maximum loads of 230-245 tons/hour at which carry-over of silica was most probable. The silica content of the boiler water in the clean section ranged from 2.7 - 11.5 mg/litre and in the salty sections from 28-100 mg/litre. When the silica content in the salty section was up to 80 mg/litre the silica content in the saturated and superheated steam did not exceed 0.025 mg/litre. After installation of the screens it was also found that the boiler could be operated over a much wider range of load without the quality of the steam being impaired. Graphs of the relationship between the total carry-over and the silica content of the boiler water are given in Fig.6. This graph includes similar data for a boiler type PK-14 at another power station which was not modified.

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The advantages of the new screen are clearly seen. Typical test data are tabulated. There are 6 figures, 1 table and 1 Soviet reference.

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